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IN WISCONSIN AND OHIO,

GIVEN AT THE MEETING OF THE AMERICAN ANTIQUARIAN SOCIETY, OCTOBER 22, 1883.

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[From the Proceedings of the Society, New Series, Vol. III., No. 1.]

Prof. FREDERICK W. PUTNAM gave an account of his recent excursions in Wisconsin and Ohio. His paper, on motion of Dr. GREEN, was referred to the committee of publication, but as the author wishes to make further researches in both regions before publishing a detailed account of the ancient earthworks which he examined, a brief abstract only of his remarks is given here.

During the excursions Mr. PUTNAM was accompanied by his friend and pupil, Mr. John Cone Kimball, who took photographs of many of the works. Sketches of several were also made and were shown at the meeting.

For a portion of the time in Wisconsin the Rev. Stephen D. Peet, of Clinton, Wisconsin, was of the party, and to his knowledge of the singular earthworks of that State Mr. PUTNAM expressed his indebtedness.

It is well known that the earthworks of Wisconsin, between Lake Michigan and the Mississippi river, are remarkable from the fact that a large proportion are in the forms of animals and men, a fact which is of great ethnical importance when we remember that such effigy mounds have not been found in the adjoining regions. The only works in North America with which they are at all comparable are three in Ohio, known as the "serpent-mound," the "alligator-mound," and "Whittlesey's effigy-mound," and the two "bird-mounds" in Georgia.

In Wisconsin the effigies of animals and men are very numerous, and there is hardly a lake or a river from Lake Michigan to the Mississippi, on the borders of which they cannot be traced in large or small groups. They are made

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entirely of earth and stand out in low relief; those visited being from two to four or five feet high, though generally they were of great linear extent.

Many of these groups of effigies are associated with long narrow mounds of about the same height, and in nearly all the groups which he examined, conical mounds, varying from four to twenty feet or more in height, were found in close proximity to the effigies. These conical mounds are, in general, believed to be burial mounds, and many have been proved to be such, while the effigy mounds and the long low earthworks associated with them are generally believed not to contain human remains. Mr. PUTNAM, however, thought that the examinations had not yet been made with sufficient care and thoroughness as to enable correct conclusions to be drawn in relation to the exact character of the Wisconsin mounds. Many of the groups have been surveyed, and others have been sketched, but as yet only very unsatisfactory explorations have been made. Excavations at random have been made in hundreds of the mounds, either in search of relics or from mere curiosity, but the results of such unscientific work are seldom recorded, and our knowledge of the contents of the mounds has not been thereby increased.

What should be done before conclusions of importance can be drawn, is to make careful and thorough explorations of several of the groups. Not only should the effigy and other low mounds of a group be thoroughly explored by cutting trenches their whole length and width, and digging at least two feet below the surface on which the mound rests, but the land between and about the mounds should be trenched and carefully examined in order to see if there be any signs of a former village site or of a burial place. Of course the associated conical mounds should also be systematically examined, by a series of trenches through each mound, and not simply by sinking a shaft in its centre. This latter method as it is pursued by the relic hunter,

who, caring only for the relics he may find, wishes to obtain them with the least possible amount of labor, is vandalism, not exploration.

When several such thorough explorations shall have been made by competent men under the auspices of the State or of some well established institution, so that the results will be secured to science by publication, we shall be able to draw conclusions of importance. The author, however, did not intend to imply that a study and survey of the groups themselves was not of importance. That should precede exploration in every case, but the true character of the earthworks would never be understood until such a series of careful investigations had been made. From the absence of such explorations Mr. PUTNAM expressed himself unable to answer many of the questions asked by members of the Society, but he admitted that the examinations he had made of a few of the groups gave some indications that the effigy mounds marked burial places, although he did not at all feel sure that such would prove to be the object for which they were erected. The fact that in one large group containing several effigy mounds there were a large number of conical mounds, in nearly all of which human skeletons had been found, was the best evidence he could offer in support of this view.

Many of the effigy mounds, rudely but characteristically represent the animals formerly abundant in the country, as the bear and panther, and also birds and men. A form usually called "turtle-mounds" may be intended to represent the stretched skin of a deer or a buffalo as it would appear when pegged out on the ground for scraping, as done by the Indians. A drawing was shown of such a mound in the group explored by the author in the city park at LaCrosse.

In the centre of this mound remains of a human skeleton were found and with it were fragments of a pottery vessel, a chipped stone implement and several flint flakes. This

mound was only slightly over two feet in height, but it had been evidently reduced by long-continued trampling of beasts and men, and it may have been dug into in the past, as only a portion of the bones of the skeleton were found, although the mound was thoroughly examined. Three small conical mounds are near this effigy mound, but they had been previously disturbed, holes having been dug on their summits, and it was understood that human bones had been found. In the largest of the three the author found, near the surface, a few potsherds and fragments of human bones. In this case the burial had been made on the summit of the mound and was of the class called "intrusive," that is, it had no connection with the object for which the mound was raised, the mound simply having been used as a convenient place for the burial of an Indian in recent times.

In the smallest of the three conical mounds a fragment of a human bone was found, which probably belonged to a skeleton removed by some former digger. Near the bottom of this mound several bones of domestic animals were found, and at first they were supposed to prove that the mound had been erected since the occupation of the country by the whites; farther examination, however, soon showed that a fox or some other carnivorous animal had made its burrow in the mound and had brought in leaves and grass, as well as several animal bones, including those of the sheep, ox and pig. Had this mound remained unexplored for a considerable time longer, until the vegetable matter had decayed and the earth become compact in the centre of the burrow, as it already had for most of its length, these animal bones would have been taken as a sure sign that the mound was of recent origin.<sup>1</sup>

Two extensive groups were traced on either side of the

<sup>1</sup> It was a great satisfaction to the author to find that the city authorities of La Crosse were willing to re-sod and preserve this group of mounds, hence great care was taken to preserve their outlines during the exploration and to carefully fill the trenches when the work was done.



Baraboo river. The one on the south side of the river contains the only human effigy met with, although several have been recorded. In this case the form of a man, extended at full length on his back, was well defined to the knees. The portion below them had been destroyed by ploughing. From the top of the head to the knees the length is eighty-three feet, across the hips the width is twenty-three and one-half feet, and from shoulder to shoulder thirty-seven feet. The neck is ten feet wide. The head is seventeen feet wide and ten feet long on a line from the side of the neck to a point opposite. The arms are slightly curved and about thirty-five feet in length measured from the arm-pit. They terminate just below the projecting portion representing the hips.

This "man-mound" is at the foot of a hill. The head is to the north, up the hill, and directly north of it there is a line of several conical mounds extending over the hill.

On the opposite side of the river there is a still larger group comprising nearly thirty conical mounds, two long mounds, three "bird-mounds" and a "bear-mound," besides one or two others the form of which cannot now be made out.

Several other groups were visited in the vicinity of Baraboo, and one, in which there were three large bird-mounds, was seen on the Wisconsin river, near the Lower Dells. Several groups were also visited at Madison, one of which is on the Observatory grounds. A group over the stone quarry was carefully examined and of this a survey has since been made under the direction of Prof. Holden, for the Peabody Museum. This group contains among other forms a "panther-mound" two hundred and thirty feet long; a "bird-mound" seventy-one feet long, with wings nearly eighty feet in extent stretched at right angles from the body; a "bear-mound," about eighty feet in length from head to tail, is a good representation of the animal seen in profile.

To one inclined to the theory of the south-western origin of the mound-building nations on this continent, Mr. PUTNAM thought the study of the effigy mounds of Wisconsin in connection with their descent from a higher type of work, would prove as interesting as the supposed decadence of architecture towards the east and north. It was, he said, of interest to note, whatever the true meaning of the facts may be, that while the animal and human forms are represented in Wisconsin by low mounds made by scraping up the earth about the spot, in Ohio the three effigy mounds are made of clay placed over a foundation of stones, and that the two bird-mounds in Georgia were made entirely of stones which were selected with more or less care. Next to these stone-built effigies of Georgia we must consider the "pumas" cut from stone, mentioned by Bandelier as found on a hill in New Mexico, which are connected with the ceremonies of the Pueblo Indians. With these the comparison can be made with the animal and human forms, both of small and large size, cut in stone, and found in portions of Mexico, and from these the transition is easy to the combination of similar forms with the architectural ornaments of the large buildings of Yucatan, where pumas, serpents, birds and human forms, both simple and in combinations of many kinds, abound.

It would also be of further interest in this connection to trace the pictographs, the potter's art, and the carvings in stone, bone, shell and wood, found in various parts of North America, representing both animals and man.

Such a survey of these arts would show many points of similarity between widely separated portions of the country and would help either to confirm, or disprove, the conclusions which have been drawn as to the supposed close connection of all the American nations.

The excursion in Ohio took place in September. After an examination of several places in the Little Miami Valley, where explorations were being carried on for the



Peabody Museum, under the personal supervision of Dr. Metz, during which Mr. Kimball took several photographs of mounds, a party consisting of Dr. C. L. Metz, Mr. C. F. Low, Judge Cox, Mr. Kimball and the speaker took the cars to Hillsboro. At this place a large mule wagon was secured and the trip made to Brush Creek, on which stream and its east branch are found the famous Serpent Mound and the ancient fortification known as Fort Hill. Thence to Bainbridge and down the Paint Creek valley to Chillicothe, on the Scioto. From this city excursions were made to the Hopeton, High Bank and other earthworks and mounds in the vicinity. It will be seen that the route was through a portion of Ohio containing some of the most noted earthworks described by Atwater and published in the first volume of the Transactions of this Society in 1820, also many of the works which about a quarter of a century afterwards received the attention of Squier and Davis and have been illustrated in the important volume published by the Smithsonian Institution in 1848.

The first point visited was the ancient work designated by Squier and Davis as the "Great Serpent." This is on the land of Mr. John J. Lovett, Bratton Township in Adams county. The singular structure is on a high ridge of land, along the western side of which the east fork of Brush Creek flows to the southward. This ridge ends at the north in a narrow precipitous ledge about eighty feet high. On the eastern side, except at its northern portion, the ridge is not as precipitous as on the western, and towards the southeast it rounds off to the cultivated fields. The ridge has several deep gullies on the western side and one or two on the eastern. It curves somewhat to the southwest, and there is a considerable depression in the central portion.

The outer edge of the oval figure in front of the "mouth of the serpent," is eighty-five feet from the edge of the

precipice forming the northern boundary of the ridge. This figure is made by a low embankment, now about two to three feet high and from sixteen to eighteen feet wide, enclosing an oval space eighty-six feet in length and about thirty feet in width at the widest part of the figure towards its southern end. Just north of the centre of this oval figure there are the remains of a small pile of stones, which Squier and Davis mention as having been thrown down when they surveyed the work in 1846. The ridge was cleared of its forest many years ago and for a time was ploughed and cultivated, so that the height of the earth-work has been considerably reduced. It is probable that it was never much over four feet high in any part, which is the height stated by Mr. Lovett's father who remembers it before it was ploughed over.

Between the oval figure and the edge of the ledge there is a slightly raised circular ridge of earth, from either side of which a curved ridge extends towards the sides of the oval figure. This is not noticed by Squier and Davis and it may have been formed by sheep or cattle approaching the edge of the cliff around the oval figure, but its symmetry and position in relation to the oval figure makes it necessary to call attention to it.

A curved embankment, about two feet high and eighteen feet wide in its central portion, following the outline of the southern end of the oval, but seventeen feet from it, measuring eighty-four feet from east to west, forms the "mouth of the serpent." From each end of this curved portion an embankment fourteen feet wide extends southward about ninety feet, uniting and forming one forty feet wide, which makes the "neck of the serpent." On each side of the "head" thus formed, and near the centre, there is a projecting portion of the embankment which curves outward and downward for about thirty feet in length. In the figure given by Squier and Davis these projections are represented as at right angles to the embankment and

as if projecting from the "neck." In this and in a few other details the figure mentioned does not agree with the diagram exhibited, and the several discrepancies were noticed by all the party. From the wide portion forming the "neck" the embankment gradually narrows to about fifteen feet and curves to the eastward. Then it makes a sharp curve to the southwest and south. The second curve is a sharp one to the eastward; thence the embankment extends southward and curves to the west, then south down the depression which divides the northern from the southern portion of the ridge, and, again, in a long stretch to the southeast, then south, making a shorter curve to the west, then extending up the slight declivity of the depression to the southeast, thence it sweeps to the westward and again turns slightly to the eastward, from which point the triple coil of the "tail" begins. At the end of the "tail" the width of the embankment is not over five feet, and its height is about one foot. The total length of the "serpent" following all the curves, and starting from the extreme point of the curved part forming the "mouth" is thirteen hundred and thirty-five feet. Measured from the northern end of the oval figure, on a line drawn through the centre of the "head" and following the curves from this point to the end of the "tail of the serpent," the total length of the work is fourteen hundred and fifteen feet.

In respect to its structure this work differs from the effigy mounds of Wisconsin in having its base formed in great part of small stones upon which the earth was placed. That the work was intended in a general way to represent a serpent, or snake, the speaker thought could not be doubted, and also that the oval figure in front of it was part of the general design; but that the oval figure was intended to represent an egg either about to be swallowed by the serpent, or ejected by it, he thought might be questioned. The serpent has always played an important part in the mythology of the new as well as in that of the old world;



but in instituting a comparison between the two the speaker said we must not go too fast or too far. On the ancient pottery of Peru and on the burial jars from Pacoval, Brazil, the serpent is represented in various ways. On some vessels it is painted in color, on others it is moulded or carved in relief. Among the gold ornaments found in ancient graves all the way from Peru to the Isthmus, the serpent is often found. On a large number of the ancient burial jars of Nicaragua, now in the Peabody Museum at Cambridge, it is represented either in a realistic or conventional manner, and in this connection has, presumably, a mythological or symbolical meaning. In Yucatan it appears carved in stone on the front of one of the large ruined buildings. Farther north in Mexico it is common among the Terra-cotta figures and pictographs. On the pottery from the mounds in Missouri it is known as an ornament on at least two specimens which are figured in the Transactions of the St. Louis Academy of Science. In Tennessee, particularly in the mounds in the eastern portion, it appears on the carved shells, as shown by the numerous specimens in the Cambridge Museum, and in that Museum there is also a carving on a piece of antler, recently found by Dr. Metz in a mound in the Little Miami Valley, which represents the rattlesnake in a conventionalized manner. These were some of the prominent instances, but with them should be remembered the serpent gens of several Indian tribes, and the myths and stories in which the serpent often has a prominent part. Bearing these facts in mind, the speaker said it was not at all surprising to find the serpent of gigantic size represented back of the imposing precipice in the beautiful valley of Brush Creek, and he thought it might be regarded either as a symbol, a monument to mark a sacred place, or possibly as a place of worship.

About two hundred feet to the southeast of the serpent-mound, the earth in the ploughed field, for an acre or

more, is darker than the surrounding soil, and contains many fragments of pottery, flint chips, arrowheads, hammer-stones, and other stone implements, which were in vain sought for in the light colored soil adjoining. This would indicate either a village site or an ancient burial place, but the long-continued cultivation of the spot precludes any definite conclusions until an extended exploration of the region is made.

Further to the southeast, or about five hundred feet from the "tail of the serpent," there is a conical mound which has never been excavated. It is now about fifteen feet high and sixty in diameter, but it has been ploughed over for many years and is consequently considerably lower than when first known to the Lovett family whose house is near by.

"Fort Hill" in Highland county was the next place visited and was found to be in every way the remarkable fortification described by Squier and Davis. The immense stone wall, built on the very edge of the hill and even extending down its steep sides, the ditch inside the wall, from which the stones were taken, and the almost inaccessible level area of nearly fifty acres covered with a forest growth of great age, all tend to render this one of the most remarkable of the ancient works of the country, and probably no other work in the United States has the impress of antiquity so strongly stamped upon it as this. The growth of vegetation has almost incorporated the artificial wall, twenty to thirty feet or more in width and from eight to fifteen feet in height, with the natural hillside, and immense trees have grown and decayed on the very summit of the wall. One decayed oak stump on the wall still measures over nine feet by seven in its two diameters,<sup>1</sup> and there are several others of six and seven

<sup>1</sup>This is probably the decayed stump recorded by Squier and Davis thirty-seven years ago as twenty-three feet in circumference. The diameters given above were taken across the top of the stump which is still nearly three feet high.

feet in diameter. The accurate description and plan given by Squier and Davis render a detailed account of this work unnecessary, the speaker said, but he thought that it should be visited by every one inclined to doubt the antiquity of the great works of the State of Ohio. The much larger and in some respects more scientific structure known as Fort Ancient, although probably as old, did not make such an impression upon him as did this old Fort on the isolated hill, rising some five hundred feet above the bottom lands of Brush Creek.

On the drive down Paint Creek the several earthworks described by Atwater were visited, but they were found to be nearly obliterated, and walls once eight or ten feet high are now barely traceable. This rapid yielding to the levelling hand of man is due to the fact that the earth of which they were composed was principally of surface soil and could be easily levelled or greatly reduced by the plough. The large tumulus near the earthwork marked A on Atwater's map is probably but little changed since his time, and fine photographs were taken of it. The stone fort on the hill near Bainbridge is said to be nearly destroyed and was not visited.

During the drive down the valley from Bainbridge to Chillicothe, eighteen mounds, all of considerable size, were seen from the wagon. At Chillicothe the party were joined by Mr. Albert Douglas, jr., and Dr. B. F. Miesse, with whom several excursions were made to ancient works in the vicinity.

About four miles to the northwest of the city, near the fair grounds, there is a large conical mound nearly thirty feet high, from the top of which can be seen three other large mounds, all of which are conspicuous objects in the valley, as is shown by the photographs taken.

The Hopeton Works and the adjoining group, designated as Cedar Bank Works by Squier and Davis, were found to be the best preserved and in several respects the most



interesting of the large earthworks in the Scioto valley. The description and figures given of these groups by Squier and Davis leave little to be said. Of course the constant cultivation of the land has greatly reduced the embankment of the large circle, which was probably never more than five feet in height, but it, as well as the two small circles on the east side of the square, can still be traced. The eleven higher and harder clay walls forming the square have proved a greater obstacle to the plough and portions of them are probably now of about their original height, or nearly twelve feet. In fact these clay walls are so hard and compact that their cultivation is too difficult a matter to be undertaken without going to great labor and expense, as was stated by Squire J. Smith who has given much attention to their structure. To Squire Smith the party were under great obligations for his guidance over the works and to the group a mile above. He has also kindly promised to send to the Peabody Museum a survey of the two groups, with accurate measurements of the walls. Many stone implements and flint chips have been found in and about the enclosures, several of which were given to the speaker, and others were found by the party.

The earthworks at High Bank, about five miles below Chillicothe, on the Scioto river, were visited, and it was found that great changes had taken place since they were surveyed by Squier and Davis in 1846. All the smaller works adjoining the large circle and octagon have nearly disappeared, and the wall of the large circle is nearly obliterated. Even the seven<sup>1</sup> embankments forming the octagon have been reduced and spread by successive ploughings and cultivation, so that they are now not over four to six feet high, and are about sixty feet wide on top. They seem to have been made of the subsoil of the region,

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<sup>1</sup>The wall on one side is so built as to correspond with the two on the opposite side.

but are not so hard and compact as the embankments at Hopeton. Mr. Milton Jones, on whose land a portion of the work is situated, informed the speaker that a number of human bones had been ploughed up in the large circle, and that numerous stone implements had been found within the works; and he kindly gave the Peabody Museum two polished celts obtained during the present year. He also stated that whenever the walls of the octagon had been ploughed over his attention had not been attracted by any particular objects in the clay.

In relation to Mr. Morgan's theory that these high walls were erected for the purpose of building the dwelling places of the people upon them, the speaker stated that he thought the general character of works of this class was against the theory. There are many such in Ohio in which the circle is combined with a square or an octagon, and they are all so nearly alike and have so many accessories in common that it is probable they were made by one great people for the same purpose.<sup>1</sup>

While such houses as Mr. Morgan has suggested could have been erected on some of the earthworks, on others of a similar character except in the size of the walls, it would have been useless if not impossible to have built the houses

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<sup>1</sup>The following gives the size of a few of the earthworks to be considered in this connection with the heights of their walls:—

*High Bank Works.* The octagon contains twenty acres. Its walls were twelve feet high. The circle contains eighteen acres. Its walls were five feet high.

*Hopeton Works.* Square twenty acres; walls twelve feet; circle twenty acres; walls five feet.

*Newark Works.* Octagon fifty acres; walls five to six feet; circle twenty acres; walls twelve feet high in one portion, rest six feet. Square twenty acres; walls five to six feet.

*Liberty Works.* Square twenty-seven acres; walls four feet. Large circle forty acres; walls three feet.

*Marietta Works.* Large square fifty acres; walls five to six feet. Small square twenty-seven acres and walls of less height than other. The elevated platforms of earth inside and near the walls of these squares are two to three feet higher than the walls.

*Portsmouth Works.* The eastern wall of the square is ten feet and the western, part of which is natural, is forty feet high.

so as to form a means of defense, as he has suggested. It seems far more probable, if such works were defensive villages, that the high walls were simply a substitute for lower walls which had palisades on their summits. In such walled towns as have been protected from cultivation unquestionable sites of the houses of the people have been found within the walls or embankments, as in Tennessee and Missouri, and in these cases there can be but little doubt that the low embankments were surmounted by palisades.

Within the Ohio squares and octagons, a large quantity of refuse material and many implements and ornaments have been found, such as would be expected in and around the houses of the people, while nothing of the kind, not even the ashes and charcoal of fires, had been traced on the top or sides of the high embankments. In answer to this it might be said that all signs of the houses, fires and refuse from the dwellings would have been washed from the tops and sides of the walls in the long period of time which has elapsed since they were destroyed. The speaker would say in response that this refuse material would be somewhere, it could not all decay, and he knew from long experience in making explorations that it was always found on the immediate site of the house or in a refuse pile near by. The speaker claimed that we had no right to theorize about what might be done, but by careful examination with spade and pick we should endeavor to find out what had been done, and this not in one place but in many, as it was by the accumulation of a hundred little facts found under similar conditions that we are led to the proper determination of the whole. As to the supposed wash of the walls and their spreading from that cause, the speaker stated that there was much misconception in that connection. Of course grass and other vegetation would soon begin to grow on an embankment and if the embankment was made smooth and compact and



was cared for, as these ancient embankments must have been, the wash and spreading of the walls would be very slight indeed, and the greater part would take place during the first years of their existence. After such a place was left to nature the vegetable growth would at once encroach upon it and protect it from the elements. In fact, he felt convinced, from many examinations of the ancient mounds of earth, that of all the monuments erected by man none were so enduring; but as soon as man started their destruction by removing the vegetation and exposing the unprotected soil to the winds and rains, disintegration began and would continue until vegetation again spread its protecting arms over the spot.

The speaker also thought that we must take other things into consideration in relation to Mr. Morgan's theory that the people who built these earthworks in the Ohio valley were closely connected with the pueblo people west of the Rio Grande, that they were, in fact, an offshoot from them, and hence the peculiar method of architecture.

In this connection it was only necessary to call attention to several of the arts of the people of the two regions to show that they had nothing in common either in ceramic or decorative art; and from the little we know of their osteological remains it could only be said that there was a general resemblance in their physical characters such as would probably prove to be common to all the great Mongolian stock to which both probably belonged.



